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Law lags advances in nanotechnology, expert warns

By Mark Grossman
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March 31, 2003 --Nanotechnology is the science of very small things, and I do mean very small. Like every new technology that preceded it, the development of the law surrounding nanotechnology lags well behind advances in the field.

Today the law governing it is where Internet law was in 1995. It fills only a pamphlet.

Nanotechnology is "the ability to do things -- measure, see, predict and make -- on the scale of atoms and molecules," according to the definition of the Nanobusiness Alliance. To visualize the minute realm of nanotechnology, consider this: A nanometer is one-billionth of a meter, which is approximately 1/80,000 the width of a human hair and 10 times the diameter of a hydrogen atom.

Some speculate that nanotech, which cuts across many disciplines, will be the next big thing in the world of technology, taking a place on the list that includes the industrial revolution, atomic energy, computers, space exploration and the Internet.

With nanotech, we're talking about working on the atomic and molecular level to create things that have unique chemical, physical and biological properties because of their nano size.

If you think that nanotech is just hype, consider that companies like IBM, Hewlett-Packard, General Motors, General Electric, Siemens, Intel, Hitachi and Dow are involved in nanotechnology research and development. Furthermore, the United States is getting stiff foreign competition in nanotech research from Japan, the European Union, Russia, Korea and China.

President Bush's proposed 2004 budget provides $847 million for the multiagency National Nanotechnology Initiative -- a 9.5 percent increase over 2003. The money will be used to advance the understanding of nanoscale phenomena. "This increased understanding promises to underlie revolutionary advances that will contribute to improvements in medicine, manufacturing, high-performance materials, information technology and environmental technologies," according to the President's Office of Science and Technology Policy.

Among notable nanotechnology achievements in the past year, according to the Office of Science and Technology Policy, are the development of single molecule electron devices, molecular motors, nanoscale fabrication using atomic force microprobes, micro-cantilevers to detect proteins and enhanced medical imaging using nanoparticle-based probes.

It's not just Star Trek and science fiction anymore.

On the legislative front, Rep. Mike Honda (D-Calif.) introduced the Nanoscience and Nanotechnology Advisory Board Act of 2003. The bill would establish an independent advisory board, comprised of leaders from industry and academia, advising the President and Congress on research investment strategy, policy and objectives.

It would also create an advisory board to determine short-term, medium-range, and longer-range goals and objectives. The bill calls for the board to submit an annual report to the president and Congress describing the progress made with nanotechnology.

The legislation is probably a step in the right direction since its underlying purpose would seem to be focusing policy-making attention on nanotech.

So little attention has been focused on the ethical, moral and legal issues raised by the new technology. For example, if nanotech could allow us to go into genes and fix them to prevent disease, would it be OK to go into genes to "improve" those with no obvious problems?

There are also practical business issues that need to be examined. As lawyers inevitably get involved with what is expected to be a high-stakes business, all sorts of patent, copyright, health, safety, environmental and other legal issues arise.

As all this goes from science fiction to reality, more and more licensing and technology transfer deals will certainly arise.

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